

<b>Interview Summary</b>	Application No. 10/779,524	Applicant(s) YUN ET AL.	
	Examiner Yewebdar T. Tadesse	Art Unit 1734	

All participants (applicant, applicant's representative, PTO personnel):

- (1) Yewebdar T. Tadesse. (3)\_\_\_\_\_.
- (2) Michael F. Morano. (4)\_\_\_\_\_.

Date of Interview: 13 December 2005.

Type: a) ☒ Telephonic b) ☐ Video Conference  
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.  
If Yes, brief description: \_\_\_\_\_.

Claim(s) discussed: 1 and 22.

Identification of prior art discussed: Kawase et al (US 6,660,332) .

Agreement with respect to the claims f) ☐ was reached. g) ☐ was not reached. h) ☒ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: See Continuation Sheet.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an  
Attachment to a signed Office action.

\_\_\_\_\_  
Examiner's signature, if required

## Summary of Record of Interview Requirements

### Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

### Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

#### Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

#### 37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,  
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

### Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Examiner has agreed that attorney's argument (see proposed arg. faxed 12/9) that in Kawase et al Pitch ( $P$ ) =  $L/n$ , wherein  $n$  = the number of nozzle groups "not" the number of nozzles. Examiner pointed to the attorney that  $P = n$  (shifting distance), the multiplying number or  $n$  should be greater than 1, in order the pitch to be greater than the shifting distance( per applicant's example discussed on page 9 and Fig 4). The examiner will update search and consider applicant's argument and amendment upon filing a formal amendment .

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**FACSIMILE TRANSMISSION**

**DATE:** December 9, 2005

**TO:**

Examiner Yewebdar T. Tadesse

U.S. Patent and Trademark Office, Group A.U. 1734

571-273-1238

**FROM:**

Michael F. Morano, Esq.

**NO. OF PAGES TO FOLLOW:**

7

**MESSAGE:**

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8054-38 (LW9081US/CS)

APPLICANTS: Yong-Kuk YUN et al. EXAMINER: Yewebdar T. Tadesse  
SERIAL NO.: 10/779,524 GROUP ART UNIT: 1734  
FILED: February 13, 2004  
FOR: APPARATUS FOR FORMING AN ORGANIC LAYER AND  
METHOD OF FORMING AN ORGANIC LAYER

The following represents proposed lines of reasoning for distinguishing the cited references, which Applicants are submitting solely for the purpose of facilitating discussion during the scheduled December 13, 2005 Interview. As such, Applicants do not intend for this paper to be entered into the prosecution file.

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Claims 1 and 22, as per the June 27, 2005 Amendment read as follows:

1. An apparatus for forming an organic layer on a substrate, comprising:  
a spraying device, the spraying device comprising:

a plurality of head units each formed in a corresponding row, wherein each head unit includes at least one head having spraying nozzles, and is shifted a horizontal distance from a previous head unit, wherein the spraying nozzles have a pitch between neighboring spraying nozzles, a multiple of the shift distance being substantially identical to the pitch.

22. An apparatus for forming an organic layer on a substrate, comprising:

a spraying device that includes first to nth head units respectively disposed in first to nth rows, wherein n is an integer, and sprays organic material onto the substrate, each head unit being shifted by a predetermined distance from a previous head unit, wherein each head unit includes a plurality of heads having spraying nozzles; and

a transferring device that transfers the substrate in a printing direction, wherein the spraying nozzles are arranged in a line, and have a pitch between neighboring spraying nozzles, the pitch being substantially identical to n times the predetermined distance.

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**CLAIM REJECTIONS**

In the August 19, 2005 Office, the Examiner made the following rejections:

**Claim 1**

**Section 102(a)**: U.S. Patent No. 6,660,332 ("Kawase '332");

**Section 102(b)**: European Patent Application Publication No. 0754553 ("EP '553");

**Section 103(a)**: EP '553 in view of Kawase '332 or U.S. Patent No. 6,579,139 ("Mishima");

**Section 102(a)**: U.S. Patent Application Publication No. US2003/0186613 ("Kawase '613"); and

**Section 103(a)**: Kawase '613 in view of Kawase '332 or Mishima

**Claim 22**

**Section 102(a)**: Kawase '613; and

**Section 103(a)**: Kawase '613 in view of Kawase '332 or Mishima

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Kawase '332

The Examiner maintains that Kawase '332 discloses spraying nozzles having a nozzle pitch ( $L/n$ ) which equals a shifting distance (scanning distance  $\delta$ ) divided by  $\cos\theta$ . The Examiner refers the equation is col. 3 of the Kawase '332, which reads:

$$\delta = (L/n)\cos\theta.$$

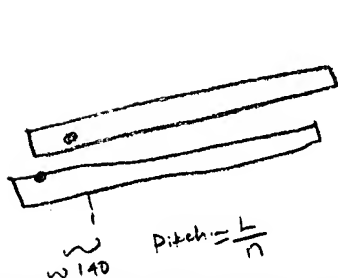
$L/n$  does not represent the pitch. As stated in col. 3, lines 28-41 and shown in Fig. 1,  $L/n$  represents the length of a nozzle group, where  $L$  is the length of a nozzle line and  $n$  is the number of nozzle groups.

Accordingly, the cited equation does not deal with a pitch between nozzles.

Moreover, Kawase '332 teaches a pitch between nozzles which is less than shift distance. See, e.g., Kawase '332, Fig. 1. In contrast, the pitch of the claimed embodiments is greater than (e.g. a multiple of) the shift distance. See Applicants' disclosure, Fig. 4.

Furthermore, the pitch of the claimed embodiments results in a configuration such that each corresponding spraying nozzle of corresponding heads of adjacent head units overlap to reduce the distance between droplets. See, e.g., Applicants' disclosure, Fig. 4. In contrast, Kawase '332 teaches that as a result of a head unit 28 being moved in the Y-direction, there are spraying nozzles that cannot overlap with each other and a distance between droplets cannot be reduced. See, e.g., Kawase '332, Fig. 1.

Accordingly, Kawase '332 does not teach the features of claims 1 and 22.



$$d_i < P$$

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For Discussion Purposes Only



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EP '553

The Examiner states that EP '553 is capable of having a multiple of the shift distance of the head units which is identical to the pitch because the distance between the nozzles depends on the desired pixels formed on the substrate.

In contrast to the claimed embodiments, EP '553, like Kawase '332, teaches a pitch between nozzles which is less than shift distance. See, e.g., EP '553, Fig. 19.

Moreover, in contrast to the claimed configurations, EP '553, like Kawase '332, teaches that as a result of the shifting of head units 120, there are spraying nozzles that cannot overlap with each other and a distance between droplets cannot be reduced. See, e.g., EP '553, Figs. 19 and 24.

Furthermore, the conclusion that the device is "capable of having a multiple of the shift distance of the head units which is identical to the pitch" does not logically follow from "the distance between the nozzles depending on the desired pixels formed on the substrate". One of ordinary skill in the art could not arrive at such a conclusion without the benefit of hindsight.

Accordingly, EP '553 does not teach the features of claims 1 and 22.

Mishima

The Examiner maintains that Mishima discloses a pitch between nozzles that is equal to a multiple of a shift distance (integer times of the element interval).

However, the element interval in Mishima is not equal to a shift distance. In contrast, the element interval is the distance between electrode elements. The nozzle pitch is the same as electrode element interval so that a droplet 9 of a solution

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containing a material for forming a conductive film is dropped on the correct position between the electrode elements 2 and 3. See Fig. 19C. The pitch of the nozzles in Mishima has nothing to do with shift distance, and instead is based on the electrode element interval so that the conductive film for connecting each set of element electrodes 2 and 3 is dropped in the right place. In other words, the nozzles in Mishima are lined up over the electrode elements according to the electrode element interval.

Accordingly, Mishima does not teach the features of claims 1 and 22.

#### Kawase '613

As with EP '553, the Examiner states that Kawase '613 is capable of having a multiple of the shift distance of the head units which is identical to the pitch because the distance between the nozzles depends on the desired pixels formed on the substrate.

As argued with respect to EP '553, the conclusion that the device is "capable of having a multiple of the shift distance of the head units which is identical to the pitch" does not logically follow from "the distance between the nozzles depending on the desired pixels formed on the substrate". One of ordinary skill in the art could not arrive at such a conclusion without the benefit of hindsight.

Furthermore, the stated objective of Kawase '613 is to avoid overlap at ejection start and end points. See Kawase '613, ¶¶ 0131-0132. Avoidance of overlap is obtained by the shifted configurations, shown in, for example, Figs. 3 and 4 of Kawase '613. In contrast, the pitch of the claimed embodiments results in a configuration such that each corresponding spraying nozzle of corresponding heads of adjacent head units overlap to reduce the distance between droplets. See Applicants' disclosure, Fig. 4.

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Accordingly, there is no motivation to have pitch between nozzles that equals a multiple of the shift distance because such a configuration results in the overlap that Kawase '613 seeks to avoid.

Moreover, in contrast to the claimed embodiments, Kawase '613 teaches a pitch between nozzles which is less than shift distance. See, e.g., Figs. 3 and 4. Indeed, Kawase discourages a small shift size, which is required to result in a pitch that is greater than a shift distance. See Kawase, '613, ¶¶ 0135-0136 (stating that shift distance should be greater than 0.1 mm and preferably at least 0.3 mm, whereas, in accordance with the embodiments of the present invention, the shift distance in Applicants' disclosure is, for example, 14  $\mu$ m, which is 1/10 of the pitch).

Accordingly, Kawase '613 does not teach the features of claims 1 and 22.

The contact information for Applicants' attorney is as follows:

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